

***NATIONAL WEATHER SERVICE SOUTHERN REGION SUPPLEMENT 05-04
APPLICABLE TO INSTRUCTION 10-922***

July 6, 2004

***OPERATIONS AND SERVICES
HYDROLOGIC SERVICES PROGRAM, NWSPD
WEATHER FORECAST OFFICE HYDROLOGIC PRODUCTS SPECIFICATION NWSI 10-922
WEATHER FORECAST OFFICE HYDROLOGIC PRODUCTS EXAMPLES NWSI 10-923
WFO PUBLIC HYDROLOGIC PRODUCTS***

NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>.

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Weather Forecast Office Public Hydrologic Products

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1. Introduction. This Supplement will describe the various types of public hydrometeorological products issued by a Weather Forecast Office (WFO).
- 1.1 Purpose. This Supplement states Southern Region's policy for the production and delivery of public hydrometeorological products.
- 1.2 Scope. This supplement applies to all Southern Region WFOs.
- 1.3 Objectives. This supplement will establish regional policy related to the headers, issuance criteria, contents, and format of the WFO public hydrologic products.
- 1.4 Call to Action Statements. Call to Action (CTA) statements should be used whenever possible to emphasize the seriousness of the hydrologic situation. In particular, offices are strongly encouraged to use the phrase, Turn Around Don't Drown [™], in their office's products as well as in media interviews. Appropriate examples include:
 - a. Turn Around Don't Drown - the life you save may be your own.
 - b. Don't trade one hour for a lifetime, Turn Around Don't Drown.
 - c. When water covers the roadway remember, Turn Around Don't Drown.

Hedging statements weaken the customer's confidence in the information presented, and should not be used in flash flood statements. Hedging statements in the CTA statements should be replaced with those that focus more on advising customers to tune to NOAA Weather Radio or their favorite news source for additional information, or to report any flooding they observe to their local law enforcement agencies so the information can be passed on to the NWS.

2. Products. The following section outlines the various public hydrometeorological products issued by a WFO.
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- 2.1 Hydrologic Outlook. A Hydrologic Outlook (ESF) should be used to issue outlooks for long term conditions or events expected beyond 36 hours. Hydrologic Outlooks can include River Flood Outlooks, Drought Information Statements, Flood Potential Outlooks, and Spring Flood Outlooks.

2.1.1 Example: (Drought Information Statement)

FGUS72 KFFC 031949

ESFATL

GAC009-011-013-015-021-023-035-045-047-053-055-057-059-063-067-077-
079-081-083-085-089-091-093-097-107-111-113-115-117-121-123-125-129-
133-135-139-141-143-145-149-151-153-157-159-163-167-169-171-175-187-
193-195-197-199-207-209-211-213-215-217-219-221-223-225-227-231-233-
235-237-247-249-255-259-261-263-265-269-271-279-281-283-285-289-291-
293-295-297-301-303-307-309-311-313-315-317-319-011856-201900-

HYDROLOGIC OUTLOOK

NATIONAL WEATHER SERVICE PEACHTREE CITY GA

345 PM EDT SAT AUG 3 2002

...DROUGHT INFORMATION STATEMENT...

**DROUGHT CONDITIONS IMPROVE SLIGHTLY ACROSS WEST GEORGIA...AND WORSEN
IN NORTHEAST GEORGIA.**

SYNOPSIS...

**THE LATEST DROUGHT MONITOR INDICATES SLIGHTLY BETTER CONDITIONS
ACROSS NORTHWEST AND WEST CENTRAL GEORGIA...WITH CONDITIONS
REMAINING UNCHANGED ACROSS EAST CENTRAL AND NORTHEAST GEORGIA DURING
THE PAST TWO WEEKS. A MODERATE DROUGHT IS ONGOING ACROSS NORTH AND
PARTS OF WEST CENTRAL GEORGIA...WHILE SEVERE TO EXTREME DROUGHT
CONDITIONS PREVAIL ACROSS CENTRAL AND EAST CENTRAL GEORGIA.**

12 MONTH RUNNING RAINFALL DEFICITS THROUGH LATE JULY...

CITY	ATLANTA	ATHENS	MACON	COLUMBUS
DEFICIT	-19.23	-8.62	-11.12	-13.26

HYDROLOGIC IMPACTS...

**WATER TABLE LEVELS CONTINUE TO FALL ACROSS MOST OF THE AREA. THIS
IS NOT UNCOMMON DURING THE SUMMER MONTHS.**

**THE CURRENT STATE OF LAKES ACROSS NORTH AND CENTRAL GEORGIA SHOWS
THAT MOST OF THE SMALL TO MID SIZE LAKES HAVE FALLEN STEADILY DURING
THE PAST TWO WEEKS...WHILE THE LARGER WATER RESOURCE LAKES ARE 7 TO
12 FEET BELOW NORMAL SUMMER LEVELS. LAKE LANIER HAS FALLEN ABOUT A
HALF FOOT DURING THE PAST TWO WEEKS...WHILE LAKE HARTWELL AND
THURMOND HAVE CONTINUED SIGNIFICANT FALLS.**

LAKE LANIER...THE PRIMARY WATER RESOURCE LAKE FOR ATLANTA...

RESTRICTIONS...

**THE OUTDOOR WATERING RESTRICTIONS REMAIN IN EFFECT IN GEORGIA. FOR
THE 15 COUNTY ATLANTA METRO AREA...INCLUDING BARTOW...CHEROKEE...
CLAYTON...COBB...COWETA...DEKALB...DOUGLAS...FAYETTE...FORSYTH...
FULTON...GWINNETT...HALL...HENRY...PAULDING...AND ROCKDALE
COUNTIES...NO WATERING IS ALLOWED FROM 10 AM TO 10 PM DAILY. ADDRESS
BASED ODD EVEN WATER USE IS ALLOWED DURING OTHER HOURS.**

**FOR THE REMAINDER OF NORTH AND CENTRAL GEORGIA...ADDRESS BASED ODD
EVEN WATER USE IS IN FORCE.**

**THIS AFOREMENTIONED INFORMATION WAS PROVIDE BY THE GEORGIA ENVIRONMENTAL
PROTECTION DIVISION.**

OUTLOOK...

THE OUTLOOK FOR NORTH AND CENTRAL GEORGIA THROUGH AUGUST 20TH CALLS FOR TEMPERATURES TO AVERAGE 0 TO 2 DEGREES ABOVE AVERAGE...WITH 50 TO 125 PERCENT OF AVERAGE PRECIPITATION ACROSS THE AREA. ISOLATED AREAS MAY FALL OUTSIDE THIS RANGE.

AS HAS BEEN THE CASE SINCE LATE MAY...UPPER LEVEL HIGH PRESSURE WILL BE CENTERED FROM THE ROCKIES TO THE TENNESSEE VALLEY...WHILE A WEAK UPPER LEVEL LOW WILL PERSIST NEAR THE GULF COAST TO SOUTHEAST U.S. COAST. THIS WILL SUPPORT TEMPERATURES AT OR A LITTLE ABOVE NORMAL DUE TO THE CLOSE LOCATION OF THE UPPER LEVEL HIGH. THE BEST CHANCE FOR WETTER THAN AVERAGE CONDITIONS WILL BE CLOSER TO THE UPPER LEVEL GULF COAST TROUGH ACROSS CENTRAL GEORGIA...WHILE FURTHER AWAY...THERE WILL BE A BETTER CHANCE FOR LESS THAN AVERAGE RAINFALL IN NORTH GEORGIA.

THEREFORE...THE CURRENT STATUS OF THE DROUGHT IS EXPECTED TO REMAIN THE SAME IN CENTRAL GEORGIA...BUT MAY WORSEN SOME IN NORTHEAST GEORGIA THE NEXT TWO WEEKS.

YOU CAN KEEP UP TO DATE ON THE LATEST DROUGHT INFORMATION AT THE FOLLOWING WEBSITES...

WWW.SRH.NOAA.GOV/FFC ...SELECT LATEST DROUGHT INFORMATION STATEMENT...

WWW.SRH.NOAA.GOV/SERFC ...GO TO WATER INFORMATION/WATER RESOURCES...

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Example: (River Flood Outlook)

FGUS74 KMEG 231633

ESFMEM

MSC095-081-057-017-115-025-261500-

HYDROLOGIC OUTLOOK

NATIONAL WEATHER SERVICE MEMPHIS TN

1025 AM CST MON DEC 23 2002

...RIVER FLOOD OUTLOOK FOR PORTIONS OF NORTHEAST MISSISSIPPI...

HEAVY RAINFALL THAT IS FORECAST OVER NORTHEAST MISSISSIPPI DURING THE NEXT 48 HOURS WILL QUICKLY RUN OFF ALREADY SATURATED SOILS. WIDESPREAD BASIN-AVERAGED RAINFALL AMOUNTS IN EXCESS OF 1.8 INCHES WITH LOCALIZED AMOUNTS OF 3 TO 4 INCHES MAY CAUSE RIVERS AND STREAMS TO RISE TO LEVELS THAT RESULT IN MINOR FLOODING.

THIS RIVER FLOOD OUTLOOK IS IN EFFECT DUE TO THE POTENTIAL FOR...

- MINOR FLOODING ALONG THE TOMBIGBEE FROM NEAR BIGBEE TO NEAR AMORY**
- MINOR FLOODING ON TIBBEE CREEK NEAR TIBBEE**

A RIVER FLOOD OUTLOOK MEANS THERE IS A POTENTIAL FOR RIVER FLOODING...BUT IT IS NOT IMMINENT. FORECAST RAINFALL MAY CAUSE RIVERS AND STREAMS TO RISE TO CRITICAL STAGES. PERSONS WITH INTERESTS ALONG THE AREAS MENTIONED ABOVE SHOULD REMAIN INFORMED OF THE LATEST WEATHER AND RIVER INFORMATION AND BE PREPARED TO TAKE ACTION AS NECESSARY. PLEASE REFER TO NATIONAL WEATHER

**SERVICE RIVER FLOOD WARNINGS AND STATEMENTS FOR THE LATEST
INFORMATION IN YOUR AREA.**

**A GRAPHIC SHOWING THE COUNTIES...RIVER FORECAST POINT LOCATIONS...
AND RIVER REACHES IN THE OUTLOOK AREA IS AVAILABLE AT
THE FOLLOWING WEB SITE /USE LOWER CASE/:**

[HTTP://WWW.SRH.WEATHER.GOV/SERFC/RFO/MEGRFO.HTML](http://www.srh.weather.gov/serfc/rfo/megrfo.html)

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Example: (Spring Flood Outlook)

**FGUS74 KBRO 141858
ESFBRO
TXC047-061-215-247-261-427-489-505-142200-**

**HYDROLOGIC OUTLOOK
NATIONAL WEATHER SERVICE BROWNSVILLE TX
100 PM CST FRI MAR 14 2003**

...SPRING FLOOD OUTLOOK...

SOIL MOISTURE CONDITIONS...

**ABOVE NORMAL RAINFALL HAS FALLEN ACROSS THE EXTREME WESTERN AND NORTHERN COUNTIES
OF ZAPATA, JIM HOGG, BROOKS, AND KENEDY DURING THE DURING THE MONTH OF
FEBRUARY. YEAR TO DATE RAINFALL TOTALS ARE AVERAGING 1 TO 2 AND A HALF INCHES
ABOVE NORMAL OVER THESE AREAS. THIS IS UNUSUAL FOR THIS TIME OF THE YEAR.
COMBINED WITH THE BENEFICIAL RAINS THAT OCCURRED OVER THE LATTER PART OF 2002,
SOIL MOISTURE IS ABOVE NORMAL FOR THE COUNTIES OF ZAPATA, JIM HOGG, BROOKS AND
KENEDY. THE SOUTHERN COUNTIES OF DEEP SOUTH TEXAS OR THE LOWER RIO GRANDE
VALLEY HAVE CONTINUED TO RECEIVE BELOW NORMAL RAINFALL. SOIL MOISTURE OVER
THIS AREA IS NEAR NORMAL.**

RIVER AND STREAM CONDITIONS...

**THE RIO GRANDE RIVER AND LOCAL STREAMS IN THE DEEP SOUTH TEXAS HYDROLOGIC SERVICE
AREA ARE ALL WELL BELOW FLOOD STAGE.**

RECENT FLOODS....

**THE AREA EXPERIENCED FLOOD EVENTS DURING THE MONTHS OF SEPTEMBER, OCTOBER AND
NOVEMBER 2002. THE FLOOD EVENTS WERE LIMITED TO BRIEF FLOODING OF URBAN AREAS
AND LOW LYING FLOOD PRONE AREAS.**

DROUGHT AREAS...

**SEVERE TO INTENSE DROUGHT CONDITIONS PERSISTED THROUGH MUCH OF LAST YEAR. BENEFICIAL
RAINFALL DURING THE LATTER PART OF THE 2002 EASED THE DROUGHT CONDITIONS. MAJOR
LONG TERM CONCERNS CONTINUE FOR WATER SHORTAGES AT BOTH FALCON AND AMISTAD
RESERVOIRS. THESE TWO RESERVOIRS PROVIDE MUCH OF THE WATER FOR MUNICIPALITIES
AND AGRICULTURAL INTEREST FOR THE LOWER RIO GRANDE VALLEY. COMBINED STORAGE
AT BOTH RESERVOIRS HAVE REMAINED STEADY DURING THE PAST MONTH, WITH COMBINED
STORAGE AT JUST OVER 39 PERCENT. STORAGE AT FALCON RESERVOIR IS 268 FEET...NORMAL
CONSERVATION LEVEL IS 302 FEET. STORAGE AT AMISTAD IS 1071 FEET...NORMAL
CONSERVATION LEVEL IS 1117 FEET. FALCON AND AMISTAD BOTH REACHED ALL TIME
RECORD LOW STORAGE LEVELS DURING THE SUMMER OF 2002.**

SPRING FLOOD POTENTIAL...

DUE TO THE WET SOIL MOISTURE AND RECENT ABOVE NORMAL RAINFALL OCCURRING OVER THE COUNTIES OF ZAPATA, JIM HOGG, BROOKS AND KENEDY SPRING FLOOD POTENTIAL FOR THESE AREAS IS AVERAGE. FURTHER SOUTH...A LOW FLOOD POTENTIAL EXISTS FOR THE LOWER RIO GRANDE VALLEY.

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- 2.2 Flood Watch. A flood watch (FFA) is used to inform the public that current and developing hydrometeorological conditions are such that there is a threat of flooding, as indicated by meteorological, soil, and stream conditions. A Flood Watch should be issued if flooding/flash flooding is expected in the first 36 hours of the forecast period. Flood watches may cover states, counties, rivers, portions of counties, portions of states, or portions of rivers (e.g., one or more forecast points).

- 2.2.1 Example(s):
000

**WGUS64 KJAN 052221
FFAJAN
MSZ043>046-048>052-054>058-062>066-072>074-061200-
URGENT - IMMEDIATE BROADCAST REQUESTED
FLOOD WATCH
NATIONAL WEATHER SERVICE JACKSON MS
421 PM CST THU FEB 5 2004**

THE NATIONAL WEATHER SERVICE IN JACKSON HAS ISSUED A FLOOD WATCH EFFECTIVE UNTIL 6 AM CST FRIDAY MORNING FOR PEOPLE IN THE FOLLOWING AREAS

IN MISSISSIPPI

COVINGTON...JONES...SMITH...CLARKE...JASPER...HINDS...NEWTON...LAUDERDALE...RANKIN...SCOTT...MADISON...KEMPER...LEAKE...NESHIBA...FORREST...LAMAR...MARION...LINCOLN...LAWRENCE... JEFFERSON DAVIS...SIMPSON AND COPIAH

WIDESPREAD RAIN AND THUNDERSTORMS ARE EXPECTED TO CONTINUE TO DEVELOP AND MOVE NORTHEAST ACROSS CENTRAL AND EAST CENTRAL MISSISSIPPI THROUGH THIS EVENING AND TONIGHT ENDING FROM THE WEST LATE TONIGHT. HEAVY PERSISTENT RAINS SHOULD AFFECT AREAS MAINLY SOUTH OF A PICKENS TO BROOKHAVEN LINE...THIS INCLUDES THE JACKSON METRO AREA. RAINFALL AMOUNTS ON AVERAGE OF 1 TO 3 INCHES HAVE ALREADY FALLEN ACROSS THE AREA. AN ADDITIONAL 1 TO 3 INCHES CAN BE EXPECTED ACROSS THE REGION TONIGHT.

THESE RAINS COMBINED WITH ALREADY SATURATED SOILS FROM TODAY'S EARLIER RAINS...WILL PRODUCE LARGER RUNOFF WITH PONDING OF WATER ON ROADS AND FLOODING OF POOR DRAINAGE AREAS. ALSO SOME AREA RIVERS ARE ALREADY IN OR NEAR FLOOD STAGE.

REMEMBER...A FLOOD WATCH MEANS CONDITIONS ARE FAVORABLE FOR FLOODING IN THE WATCH AREA. PEOPLE IN OR NEAR THE WATCH AREA ARE ADVISED TO CHECK PREPAREDNESS REQUIREMENTS...KEEP INFORMED...AND BE READY FOR QUICK ACTION IF FLOODING THREATENS OR A WARNING IS ISSUED. MOST FLOOD DEATHS OCCUR IN AUTOMOBILES. DO NOT DRIVE YOUR CAR THROUGH FLOODED AREAS! TURN AROUND DON'T DROWN...THE LIFE YOU SAVE MAY BE YOUR OWN.

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2.3 Flash Flood Warning. Flash flood warnings (FFW) inform the public of imminent or occurring flash flooding which rises rapidly from normal level to inundation within 6 hours of the causative event. Credibility is added to flash flood warnings that mention ground truth reports of flooded areas (especially from Law Enforcement Officials or Emergency Managers) and precipitation amounts.

2.3.1 Example:

WGUS54 KOUN 042044
FFWOKC
OKC071-042345-

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING NATIONAL WEATHER SERVICE NORMAN OK
342 PM CDT TUE JUN 4 2002

THE NATIONAL WEATHER SERVICE IN NORMAN HAS ISSUED A

* FLASH FLOOD WARNING FOR... KAY COUNTY IN NORTHERN OKLAHOMA

* UNTIL 645 PM CDT

* AT 342 PM CDT...DOPPLER RADAR DETECTED ANOTHER ROUND OF THUNDERSTORMS AND HEAVY RAINFALL MOVING INTO WESTERN KAY COUNTY. RADAR DETECTED OVER THREE INCHES OF RAINFALL ACROSS NORTHWEST KAY COUNTY THIS AFTERNOON. THE POTENTIAL FOR FLASH FLOODING REMAINS HIGH INTO THE EARLY EVENING AS THE STORMS MOVE EAST AND DROP ADDITIONAL HEAVY RAINS.

* LOCATIONS IN THE WARNING INCLUDE BLACKWELL...BRAMAN...KILDARE... NEWKIRK AND TONKAWA DO NOT DRIVE YOUR VEHICLE INTO AREAS WHERE WATER COVERS THE ROADWAY. THE WATER DEPTH MAY BE TOO GREAT TO ALLOW YOUR CAR TO CROSS SAFELY. VEHICLES CAUGHT IN RISING WATER SHOULD BE ABANDONED QUICKLY. MOVE TO HIGHER GROUND. WHEN WATER COVERS THE ROADWAY REMEMBER, TURN AROUND DON'T DROWN.

LAT...LON 3661 9744 3661 9722 3698 9686 3697 9745

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Example: (Flash Flood Warning with Site-Specific Model Information)

000
WGUS54 KBMX 132058
FFWBHM
ALC085-140100-

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE BIRMINGHAM AL
355 PM CDT FRI JUN 13 2003

THE NATIONAL WEATHER SERVICE IN BIRMINGHAM HAS ISSUED A

* FLASH FLOOD WARNING FOR... SOUTHERN LOWNDES COUNTY IN SOUTH CENTRAL ALABAMA * UNTIL 800 PM CDT

* EXCESSIVE RUNOFF FROM A SLOW MOVING LINE OF STORMS WILL CAUSE FLASH FLOODING OF SMALL CREEKS AND STREAMS...HIGHWAYS AND UNDERPASSES. ADDITIONALLY...COUNTRY ROADS AND FARMLANDS ALONG THE BANKS OF CREEKS AND STREAMS AND OTHER LOW LYING AREAS ARE SUBJECT TO FLASH FLOODING.

***THIS IS A DANGEROUS...LIFE THREATENING SITUATION...AND EVERY PRECAUTION SHOULD BE TAKEN TO AVOID LOSS OF LIFE AND PROPERTY. EXTENSIVE FLOODING IS EXPECTED. MOTORISTS SHOULD AVOID WATER COVERED ROADS...AND FIND ALTERNATIVE ROUTES.**

***A FLASH FLOOD WARNING MEANS THAT FLOODING IS IMMINENT OR OCCURRING. IF YOU ARE IN THE WARNING AREA MOVE TO HIGHER GROUND IMMEDIATELY. RESIDENTS LIVING ALONG STREAMS AND CREEKS SHOULD TAKE IMMEDIATE PRECAUTIONS TO PROTECT LIFE AND PROPERTY. DO NOT ATTEMPT TO CROSS SWIFTLY FLOWING WATERS OR WATERS OF UNKNOWN DEPTH BY FOOT OR BY AUTOMOBILE. IF YOUR VEHICLE STALLS...ABANDON IT IMMEDIATELY AND SEEK HIGHER GROUND. WHEN WATER COVERS THE ROADWAY REMEMBER, TURN AROUND DON'T DROWN.**

CALL 1-800-856-0758 TO REPORT FLOODING CONDITIONS.

LAT...LON 3218 8673 3235 8655 3225 8641 3215 8641 3201 8659

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2.4 Flash Flood Statement. A flash flood statement (FFS) will be issued to supplement or cancel a Flash Flood Warning. The Flash Flood Statement should contain more detailed impact information and/or remove parts of the geographical area covered by the original flash flood warning.

Flash Flood products should never be ended solely based on the fact that radar no longer shows radar echoes over an area. Flooding will likely continue for a period of time after the storms have moved out of an area. The following wording is discouraged: *"Heavy rainfall has ended across the region so the flash flood warning is cancelled."*

2.4.1 Example:

WGUS74 KOUN 082244

FFSOKC

OKC149-090045-

FLASH FLOOD STATEMENT

NATIONAL WEATHER SERVICE NORMAN OK

544 PM CDT SAT JUN 8 2002

...FLASH FLOOD WARNING CONTINUES UNTIL 9 PM FOR WASHITA COUNTY...

A POTENTIALLY SERIOUS FLASH FLOOD SITUATION IS DEVELOPING IN PARTS OF WASHITA COUNTY. RADAR RAINFALL ESTIMATES INDICATE HOURLY RAINFALL RATES OF 3 TO NEARLY 4 INCHES IN TWO AREAS...ONE FROM NEAR BURNS FLAT NORTHEAST TO JUST NORTHWEST OF BESSIE...AND THE OTHER BETWEEN CLOUD CHIEF AND COLONY. THUNDERSTORMS WITH VERY HEAVY RAIN WILL LIKELY CONTINUE TRACKING SLOWLY NORTH AND NORTHEAST OVER THESE SAME AREAS FOR AT LEAST ANOTHER 1 TO 2 HOURS. STORM TOTALS ARE NOW BETWEEN 4 AND 6 INCHES IN THESE AREAS...BASED ON RADAR ESTIMATES. STORM TOTALS MAY EXCEED 8 TO 10 INCHES LOCALLY BY MID EVENING.

DO NOT DRIVE YOUR VEHICLE INTO AREAS WHERE WATER COVERS THE ROADWAY. THE WATER DEPTH MAY BE TOO GREAT TO ALLOW YOUR VEHICLE TO CROSS SAFELY. VEHICLES CAUGHT IN RISING WATER SHOULD BE ABANDONED QUICKLY. MOVE TO HIGHER GROUND. EXCESSIVE RUNOFF FROM THIS STORM WILL CAUSE FLASH FLOODING OF SMALL CREEKS AND STREAMS...COUNTRY ROADS...NORMALLY DRY WASHES...AND FARM LAND ALONG THE BANKS OF CREEKS AND STREAMS.

KEEP CHILDREN FROM PLAYING NEAR RUSHING FLOOD WATERS. THE BANKS OF STREAMS AND FLOODWAYS ARE SLIPPERY AND RAIN SOFTENED GROUND MAY GIVE WAY EASILY. DO NOT LET YOUR CHILD BE A VICTIM OF DANGEROUS FLOOD

WATERS. TURN AROUND DON'T DROWN...THE LIFE YOU SAVE MAY BE YOUR OWN.

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- 2.5 Flood Warnings. Flood warnings (FLW) are issued when flooding is expected to occur more than 6 hours after the causative event. A flood category is a qualitative term valid for a river forecast point and its associated reach of the river and may not apply to an areal flood warning outside a river flood plain. Flood categories (minor, moderate, major, flood of record) will be included in the headlines or body of the FLWs pertaining to river forecast points.

A FLW will be reissued when the magnitude of a flooding forecast increases category (e.g. moderate to major, minor to moderate, etc.) or when there is a significant change in the crest forecast values within a flood category for a given forecast point in a river basin. WFOs should issue site-specific river flood warnings that are basin specific (i.e, for one river basin). WFOs should consider dissemination system requirements and customer/partner needs when packaging FLW products.

2.5.1 Example (River Based Flood Warning):

**WGUS42 KTBW 271642
FLWTBW
FLC027-272000-**

**FLOOD WARNING
NATIONAL WEATHER SERVICE TAMPA BAY AREA - RUSKIN FL
1240 PM EDT THU JUN 27 2002**

A RIVER FLOOD WARNING HAS BEEN ISSUED FOR THE PEACE RIVER AT ARCADIA.

SEVERAL DAYS OF LOCALLY HEAVY RAINFALL ACROSS MUCH OF SOUTH CENTRAL FLORIDA...INCLUDING THE PEACE RIVER BASIN...HAS RESULTED IN RISING RIVER LEVELS ON THE PEACE RIVER AT ARCADIA.

FOR THE PEACE RIVER AT ARCADIA...THE LATEST STAGE IS 10.1 FEET AT 09 AM THURSDAY. MINOR FLOODING IS FORECAST ... WITH A MAXIMUM STAGE OF 11.4 FEET BY 02 AM FRIDAY... WHICH IS 0.4 FEET ABOVE FLOOD STAGE. THE STAGE WILL RISE ABOVE THE FLOOD STAGE OF 11.0 FEET AROUND 05 PM THIS THURSDAY AFTERNOON. THE STAGE WILL FALL BELOW FLOOD STAGE AT 08 AM SATURDAY.

AT 12.0 FEET... THE GIRL SCOUT CAMP FLOODS. AT 11.0 FEET... ACCESS ROADS TO RIVER ACRES BECOME FLOODED. AT 10.0 FEET... 3 TO 4 HOMES IN THE RIVER ACRES SUBDIVISION FLOOD. THE LOWEST PORTION OF THE GIRL SCOUT CAMP FLOODS.

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**FLD OBSERVED FORECAST 8AM
LOCATION STG STG DAY TIME FRI SAT SUN**

**PEACE
ARCADIA 11 10.1 THU 09 AM 11.4 11.0 10.4**

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Example(Areal Flood Warning):

WGUS44 KSJT 071552

FLWSJT

TXC441-072300-

**BULLETIN - EAS ACTIVATION REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE SAN ANGELO TX
1045 AM CDT SUN JUL 7 2002**

**THE NATIONAL WEATHER SERVICE IN SAN ANGELO HAS ISSUED A
* FLOOD WARNING FOR... TAYLOR COUNTY IN NORTH CENTRAL TEXAS
* UNTIL 600 PM CDT**

*** FLOODING CONTINUES ACROSS THE CITY OF ABILENE ALONG ELM CREEK...CAT CLAW CREEK...CEDAR CREEK...AND LITTLE ELM CREEK. SOME EVACUATIONS ARE STILL TAKING PLACE. FLOODING ALSO CONTINUES IN SOME PORTIONS OF TAYLOR COUNTY OUTSIDE THE CITY. THIS CONTINUES TO BE A LIFE THREATENING SITUATION.**

PERSONS SHOULD HEED THE EVACUATION REQUESTS OF LOCAL OFFICIALS. ADDITIONAL RAINFALL IS POSSIBLE THROUGH THE DAY FROM SCATTERED SHOWERS AND THUNDERSTORMS. SOME OF THE STRONGER STORMS COULD PRODUCE A COUPLE OF INCHES OF RAINFALL IN ISOLATED AREAS. THIS WILL ONLY AGGRAVATE THE ALREADY SERIOUS FLOODING.

DO NOT DRIVE INTO FLOODED AREAS TO SIGHT SEE.

DO NOT ATTEMPT TO DRIVE AROUND BARRICADES. MOST FLOOD DEATHS OCCUR IN VEHICLES. TURN AROUND DON'T DROWN...THE LIFE YOU SAVE MAY BE YOUR OWN.

LAT...LON 3214 10010 3213 9968 3247 9969 3246 10008

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- 2.6 Flood Statements. Flood statements (FLS) are issued to follow up flood warnings contain supplemental information on previously issued flood warnings, including updated observations and impact information. In addition, the FLS can be issued for elevated stream conditions until the river reaches WFO determined warning criteria. WFOs will use the FLS product category to issue Urban and Small Stream or Arroyo Advisories.

Although the word “advisory” is not allowed in a MND header, WFOs may issue FLSs with headlines containing the word “advisory”. WFOs should issue site-specific river flood statements that are basin specific (i.e, for one river basin).A few WFOs may combine flood forecasts from multiple basins into one FLW product, when forecast points from multiple basins are in flood. WFOs should consider dissemination system requirements and customer/partner needs when issuing river based FLS products

If evidence indicates flooding, determine if it is considered “nuisance” or “life threatening”. If life threatening, a flood or flash flood warning should be in effect. If “nuisance”, an urban/small stream/arroyo advisory should be in effect. If neither, there should be no mention of dangers from high water in the terminating statement (including the calls to action) as this conflicts with the idea of ending the advisory/warning. If

nuisance ponding of water or urban and small stream/arroyo flooding is occurring at the end of an Advisory then the Advisory should be continued.

2.6.1 Example(s): River-Based Flood Statement

000
WGUS84 KLZK 311431
FLSLIT
ARC067-147-010200-

FLOOD STATEMENT
NATIONAL WEATHER SERVICE LITTLE ROCK AR
824 AM CST SAT JAN 31 2004

...RIVER FLOOD STATEMENT...

MINOR FLOODING ALONG THE CACHE RIVER POSSIBLE LATE THIS WEEK...

THIS MORNING AT THE HWY 64 BRIDGE NEAR PATTERSON...THE STAGE WAS 7.1 FEET AT 8 AM. THE RIVER IS FORECASTED TO CREST NEAR 8.0 FEET SATURDAY. FLOOD STAGE IS 8.0 FEET.

LOW SWAMPY TIMBERLAND ALONG THE RIVER WILL BEGIN TO FLOOD. FLOOD GATES SHOULD BE CLOSED AND EQUIPMENT MOVED OUT OF THE LOW GROUNDS ALONG THE RIVER AND IT'S TRIBUTARIES.

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	FLD	OBSERVED		FORECAST	7AM			
LOCATION	STG	STG	DAY	TIME	THU	FRI	SAT	

CACHE RIVER								
PATTERSON	8	7.1	WED	08 AM	7.4	7.8	8.0	

THIS FORECAST WAS BASED ON RAINFALL THAT OCCURRED OVER THE PREVIOUS 24 HOURS COMBINED WITH RAINFALL THAT IS FORECASTED TO OCCUR OVER THE NEXT 12 HOURS.

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Example(s): River-Based Flood Statement

WGUS84 KMEG 191612
FLSMEM
MSC135-200400
FLOOD STATEMENT
NATIONAL WEATHER SERVICE MEMPHIS TN
1012 AM CST THU FEB 19 2004

THIS IS UPDATED INFORMATION FOR FLOODING ALONG THE TALLAHATCHIE RIVER.

TALLAHATCHIE RIVER AT LOCOPOLIS...
MINOR FLOODING IS OCCURRING.

*	LATEST STAGE:	33.9 FEET AT 6 AM THURSDAY AND STEADY
*	BANKFULL STAGE:	32.0 FEET
*	FLOOD STAGE:	33.0 FEET
*	FORECAST:	CRESTING NOW. WILL BEGIN SLOW FALL.

* **IMPACT:** **WIDESPREAD FARM LAND FLOODING IS OCCURRING ALONG BOTH BANKS OF THE RIVER.**

TALLAHATCHIE RIVER NEAR SWAN LAKE... MINOR FLOODING IS OCCURRING.

* **LATEST STAGE:** **28.6 FEET AT 6 AM THURSDAY AND FALLING**

* **BANKFULL STAGE:** **26.0 FEET**

* **FLOOD STAGE:** **26.0 FEET**

* **FORECAST:** **CONTINUE SLOW FALL.**

* **IMPACT:** **FARM LAND FLOODING. ACCESS TO LOW LYING AREAS MAY BE RESTRICTED DUE TO HIGH WATER.**

STAY TUNED TO YOUR WEATHER RADIO AND YOUR LOCAL NEWS MEDIA FOR THE LATEST RIVER INFORMATION.

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LOCATION	FLOOD STG	OBSERVED STG	OBSERVED DAY	OBSERVED TIME	FORECAST 6 AM				
					FRI	SAT	SUN	MON	TUE
TALLAHATCHIE RIVER									
LOCOPOLIS	33.0	33.9	THU	06 AM	33.8	33.8	33.7	33.6	33.5
SWAN LAKE	26.0	28.6	THU	06 AM	28.5	28.4	28.2	28.0	27.7

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- 2.7 Hydrologic Statements. A Hydrologic Statement (RVS) can be used to issue forecast information on elevated stream or river levels below flood stage, which warrant public notification, to meet customer and partner needs. This product category should also be used to issue river recreation statements and river ice statements, as required.

2.7.1 Example:

FGUS84 KMEG 311504
RVSMEM
ARC021-MOC069-312100-

HYDROLOGIC STATEMENT
NATIONAL WEATHER SERVICE MEMPHIS TN
903 AM CST THU JAN 31 2002

DUE TO HEAVY RAINS EXPECTED LATER TODAY AND TONIGHT...WATER LEVELS CAN BE EXPECTED TO RISE ON THE SAINT FRANCIS RIVER.

AT 2 AM THURSDAY, THE STAGE ON THE SAINT FRANCIS RIVER NEAR SAINT FRANCIS WAS 13.7 FEET. FLOOD STAGE IS 22.0 FEET. THE RIVER IS FORECAST TO CREST AT 20.5 FEET ON SATURDAY MORNING. AT 19.0 FEET, OVER BANK FLOODING INTO LOW LAND BEGINS.

DO NOT DRIVE THROUGH FLOODED AREAS...ESPECIALLY AT NIGHT. STAY TUNED TO YOUR WEATHER RADIO AND YOUR LOCAL NEWS MEDIA FOR THE LATEST RIVER INFORMATION. WHEN WATER COVERS THE ROADWAY REMEMBER, TURN AROUND DON'T DROWN.

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- 2.8 Hydrologic Summary. The hydrologic summary provides hydrologic observational data and related information in a format which meets local customers and partners needs. This product will be issued at the discretion of the local WFO.

2.8.1 Example:

SRUS44 KOHX 011315
RVABNA
TNC003-021-027-037-043-055-081-085-087-099-103-117-119-125-135-159-165-169-187-
021300-

HYDROLOGIC SUMMARY
NATIONAL WEATHER SERVICE NASHVILLE TN
813 AM CDT THU AUG 01 2002

LOCATION	FLOOD STAGE	6AM STAGE	24-HOUR CHANGE
CUMBERLAND RIVER			
CELINA	40.0	15.8	-0.1
CARTHAGE	40.0	7.2	0.0
NASHVILLE	40.0	17.7	-0.1
CLARKSVILLE	46.0	27.0	-0.2
SHOAL CREEK			
IRON CITY	14.0	2.7	-0.1

**THIS DATA WAS FURNISHED WITH COOPERATION FROM THE U.S. GEOLOGICAL
SURVEY...THE ARMY CORPS OF ENGINEERS...AND THE TENNESSEE VALLEY
AUTHORITY.**

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- 2.9 Daily River and Lake Summary. The Daily River and Lake Summary (RVD) will be issued daily to provide a standardized report of river observations, lake levels, and forecast information.

2.9.1 Example(s):

FGUS54 KJAN 011524
RVDJAN
MSC001-007-011-021-023-029-031-035-037-049-051-053-055-067-073-075-
077-079-083-089-091-099-101-121-125-127-133-149-151-157-163-
LAC025-029-035-041-065-083-107-ARC017-041-021800-

DAILY RIVER AND LAKE SUMMARY
NATIONAL WEATHER SERVICE JACKSON MS
1022 AM CDT THU AUG 01 2002

.B JAN 0801 DC200208011022
.B1DH12/HG/DRH+24/HG1FF/DRH+48/HG/DRH+72/HG1FF
:
:RIVER FORECAST POINT SITES
:
:ID NAME FLOOD 7AM 24-HR 7AM
: STAGE STAGE CHANGE FORECASTS
: FRI SAT SUN
:...UPPER PEARL RIVER BASIN...
PLAM6 :PHILADELPHIA 13.0: 5.78/: 1.00: 7.60 / 8.70 / 9.00/

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ENBM6 :EDINBURG      20.0:    3.14/:    0.52:    3.20 / 3.50 / 4.30/
:
KSCM6 :KOSCIUSKO     15.0:    6.80/:    3.05:    8.20 / 6.70 / 5.40/
OFAM6 :OFAHOMA       19.0:    M/:    M:    5.30 / 6.20 / 7.70/
:
:...MIDDLE AND LOWER PEARL AND STRONG RIVER BASINS...
:
RATM6 :RATLIFF       303.0:   297.32/:    0.09:   297.30 /297.30 /297.30/
JACM6 :JACKSON       28.0:   11.93/:   -2.63:    9.80 / 8.20 / 7.60/
ROCM6 :ROCKPORT      25.0:   11.18/:    6.10:   12.30 /11.20 /10.30/
:
:...LOWER MISSISSIPPI RIVER...
:
ARSA4 :ARKANSAS CITY 37.0:    6.28/:    0.68:    6.70 / 7.30 / 7.90/
GEEM6 :GREENVILLE  48.0:   17.44/:    0.50:   18.00 /18.50 /19.10/
VCKM6 :VICKSBURG     43.0:   10.52/:   -0.33:   11.00 /11.60 /12.10/
NTZM6 :NATCHEZ       48.0:   17.58/:   -0.46:   17.20 /17.70 /18.30/
:
.END
$$

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000
FGUS54 KTSA 041640
RVDTUL
OKC037-061-071-077-091-101-105-107-111-113-117-131-143-145-147-
042200-
DAILY RIVER AND LAKE SUMMARY
NATIONAL WEATHER SERVICE TULSA OK
1040 AM CST WED FEB 04 2004

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.B TSA 0204 DC200402041040 DH12/HG/DRH+24/HGIFZ/DRH+48/HGIFZ/
.B1 DRH+72/HGIFZ
:
: RIVER STAGES AND LAKE LEVELS ARE FURNISHED COURTESY OF THE
: U.S. GEOLOGICAL SURVEY AND U.S. ARMY CORPS OF ENGINEERS.
:
: RIVER FORECAST POINT SITES
:
: STATION      FLOOD  7AM  24-HR    7AM
: ID NAME      STAGE  STAGE CHANGE  FORECASTS
:              THU  FRI  SAT
: GRAND-NEOSHO RIVER BASIN
: NEOSHO RIVER
COMO2 :COMMERCE    15.0:  3.02/: -0.01: 3.0 / 3.1 / 3.1 /
: SPRING RIVER
QUAO2 :QUAPAW     20.0:  7.19/: -0.05: 7.2 / 7.1 / 7.1 /
:
: UPPER WHITE RIVER BASIN
: KINGS RIVER
BRYA4 :BERRYVILLE 31.0:  3.35/: -0.05: 3.4 / 3.3 / 3.3 /
.END

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.B TSA 0204 DC200402041040 DH12/HP/
:
: RESERVOIR/LAKE SITES
:
: STATION      NORMAL  POOL  24-HR
: ID NAME      POOL   ELEV.  CHANGE
:

```

```

: ARKANSAS RIVER BASIN
KAWO2 :KAW LAKE      1013.0: 1012.30/: -0.10:
KEYO2 :KEYSTONE LAKE  723.0: 727.51/: -0.39:
HEYO2 :HEYBURN LAKE   761.5: 762.38/: -0.17:
BIRO2 :BIRCH LAKE     750.5: 751.51/: -0.19:
SKLO2 :SKIATOOK LAKE  714.0: 712.31/: 0.05:
HULO2 :HULAH LAKE     733.0: 735.35/: -0.06:
:
: MCCLELLAN-KERR NAVIGATION SYSTEM
WAGO2 :CHOTEAU L&D 17 : 532.26/: 0.04:
:
: RED RIVER BASIN
CYDO2 :SARDIS LAKE    599.0: 599.17/: -0.01:
HGLO2 :HUGO LAKE      405.0: 405.47/: -0.42:
:
: WHITE RIVER BASIN
BVGA4 :BEAVER LAKE    1120.4: 1113.63/: 0.02:
:
.END

$$

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Appendix A. WFO Hydrologic Product Summary

Products MNDs/IDs UGC	Headline Options	Issuance Criteria	AWIPS Application
Hydrologic Outlook - ESF UGC - County	-Flood Potential Outlook -Spring Flood Outlook -River Flood Outlook -Drought Information Statement	-Possibility of flooding beyond 36 hours - Information on drought conditions - Information on spring flood potential	Text Editor XNOW
Flood Watch - FFA UGC - Zones	-Flood Watch - Overview Headline (optional)	-Possibility of flooding within 36 hours -Increase areal coverage of watch -Update effective time of watch or cancel watch - dam/levee failure is possible, but not imminent	WWA XNOW
Flash Flood Warning - FFW UGC - County	-Flash Flood Warning	-Issue or increase geographic area of a flash flood warning - Flash flooding defined as flooding within six hours of causative event - Flash flooding reported - Dam/levee failure imminent or occurring - Local tools (eg. FFMP) indicate flash flooding is likely - Update effective time of warning - Small basin hydrologic models indicate flash flooding for specific locations along small streams	WARNGEN XNOW
Flash Flood Statement- FFS UGC - County	-Flash Flood Statement	-Supplement or cancel a Flash Flood Warning	WARNGEN
Flood Warning - FLW UGC - County	-River Flood Warning -Flood Warning	-Flooding is reported -RFC or other guidance indicates flooding is likely -Geographical area increases -Update effective time -Flooding is expected to occur more than 6 hours after the causative event -Observed flooding increases to a higher category (eg. minor to moderate, moderate to major) - Significant change in crest forecast values within a flood category - Forecast flooding increases to a higher category	WHFS WARNGEN
Flood Statement - FLS UGC - County	-River Flood Warning -Flood Warning - Urban and Small Stream Flood Advisory -Urban and Arroyo Advisory	-Continue, or cancel a Flood Warning, Urban and Small Stream Flood Advisory -Nuisance flooding is occurring or expected -Urban or small stream flooding is expected or occurring	WWA WARNGEN WHFS
Hydrologic Statement - RVS UGC - County	-River Statement -Daily River Forecasts -River Recreation Statement -River Ice Statement	-River levels are elevated but forecast points remain below flood stage -Locally determined	WHFS
Hydrologic Summary - RVA UGC - County	(Headline optional)	-Locally determined	WHFS
Daily River and Lake Summary - RVD UGC- County	(Headline optional)	-Issued once daily coded in SHEF	WHFS

